

## Escalation and Producer Price Indexes: A Guide for Contracting Parties

Business firms in search of effective methods of coping with inflation often employ price adjustment (escalation) clauses in long-term sales and purchase contracts. A conservative estimate is that contracts with a lifetime worth of \$200 billion are currently escalated using the Producer Price Index (PPI) family of indexes, either alone or in conjunction with other sources of economic data. [1](#)

Because they measure price changes objectively, both in general and for particular products, free from possible manipulation by either of the contracting parties, the producer price indexes calculated by the Bureau of Labor Statistics (BLS) are widely recognized among business people, economists, statisticians, and accountants as useful in price adjustment clauses.

This report provides guidance on the development of escalation clauses in contracts which are to be tied to PPI data. Such clauses should be written with great care to avoid serious problems when contract adjustments are implemented. The information in this report is based upon BLS staff experience in handling issues that have been brought to their attention in connection with actual escalation clauses.

The role of the BLS is to provide requested data and to explain their underlying methodology and limitations. The Bureau does not encourage or discourage the use of price adjustment measures in purchase and sales agreements. The Bureau does not directly assist in writing contracts nor does it provide advice on disputes arising from contract interpretation. Because index methodology and publication conventions could be crucial in developing escalation clauses, this report is intended to alert users to potential problems arising in these areas. [2](#)

This report is divided into three sections. First, an overview of the PPI system describes the major categories and groupings of the several thousand indexes that are published each month. Then, guidelines for assisting in the development of escalation clauses are outlined. Finally, a practical example of provisions that might be incorporated into a contract is presented, based upon the guidelines discussed, along with an example of the price adjustment calculations that would be needed to implement these provisions.

### The structure of producer price indexes

Producer price indexes measure the average change in prices received by domestic producers of commodities in all stages of processing. A PPI is an output price index, that is, it measures price changes received by manufacturers of a product. It is neither a buyer's index nor an input price index, that is, it does not measure the cost of producing that item. PPI data are based on selling prices reported by establishments of all sizes selected by probability sampling, with the probability of selection proportionate to size. Individual items and transaction terms from these firms are also chosen by probability proportionate to size sampling methods. PPIs are based on a monthly sample of about 100,000 quotations, resulting in publication of over 10,000 different indexes each month.

Indexes are organized in three major structures:

- (a) Stage of processing (SOP) -- products are organized by class of buyer and degree of fabrication, that is, finished goods, intermediate goods, and crude goods;
- (b) Industries and their products -- products are organized by producing industry as defined in the North American Industry Classification System (NAICS); and
- (c) Type of commodity -- products are organized by similarity of end-use or material composition.

(For a more detailed description of these three index structures, see the appendix.)

Indexes are available at different levels of aggregation and detail within each of the three major structures. There are broad SOP, industry, and commodity groupings, and there are indexes for specific product groups or individual items, for example, electronic components, diesel fuel, or raw cotton.

## Guidelines for developing escalation clauses

### (1) Establish the base selling price subject to escalation.

The item whose price is subject to escalation should be specified as precisely as possible. State whether the base price refers to a per-unit quantity or a certain volume of units. Give the effective month or year of this base selling price; this time period is often called the base period. Indicate the length of time it will remain in effect. (Note that BLS no longer publishes any dollar unit prices for any item within the PPI system.)

### (2) Select an appropriate index or indexes.

The Finished Goods Price Index may best indicate the general trend of inflation for goods sold in primary markets. The PPI for finished goods excluding foods may be more appropriate for users wishing to exclude the effects of volatile movements in food prices. The Intermediate Materials Price Index or the Crude Materials Price Index may best indicate price trends for semifinished or raw materials in general. Again, indexes excluding food-related materials may be more appropriate for many applications. Indexes for commodities or detailed commodity groupings may best indicate price trends for specific commodities.

Contracting parties may want to escalate the base price of a product by a single PPI series. Often, however, users may prefer to escalate on the basis of several data series, including some from other government statistical programs, to reflect changes in costs of a variety of inputs. In some contracts, for example, costs of major materials and supplies are escalated with one or more PPIs, while costs of labor are escalated with other BLS series such as the Employment Cost Index. [3](#) In such cases, the escalation clause should specify the percentage weight given to each index in calculating the total escalation amount. (See detailed discussion under guideline 9d.)

Contracting parties should choose an index or indexes representing the costs for providing a particular product or service, rather than an index for the product itself. For example, if an apparel manufacturer is contracting for long-term purchases with a producer of finished fabrics, it would be more advisable to tie the escalation clause to a PPI for synthetic fibers than to a PPI for a type of finished fabric. Otherwise, the parties may find themselves in a serious problem that could be difficult to escape from. [4](#)

Regarding the level of index aggregation or detail that might be chosen, it should be understood that while detailed indexes may target costs more specifically, they are also more likely to be permanently discontinued by BLS, or to have occasional gaps in data. Contracts should provide for these contingencies, and may minimize them if they cite a commodity index that does not go below the 4-or 6-digit level of detail, or a product code (industry-oriented) index that does not go below the 7-digit level. [5](#)

Even with the PPI program's full coverage of the mining and manufacturing sectors, not all products are included directly in the sample or published in the PPI system. Sometimes indexes must be chosen as proxies to estimate the price movements of materials or products.

### (3) Clearly identify the selected index and cite an appropriate source.

The escalation clause of a contract should identify the index selected by its complete title and any identifying code.

Please note that there is no single index entitled "The Producer Price Index." The term "Producer Price Index" refers to a family of indexes compiled by the Bureau of Labor Statistics. A specific index should be cited in the contract by referring to "the Producer Price Index for..." followed by the exact title and any identifying code number.

The clause should also cite an appropriate source for the index selected. The primary official BLS source of PPI data in print is the monthly periodical, *PPI Detailed Report*. It contains all indexes and is mailed to subscribers approximately 1 month after the initial release of each month's data.

Current PPI data in print may also be obtained from the "Summary Data from the Producer Price Index News Release," and the *Monthly Labor Review (MLR)*. The "Summary Data from the Producer Price Index News Release" is available without charge and is mailed within 2 weeks of the release date; however, it contains only a limited number of indexes. The MLR contains aggregate rather than detailed PPI data and is mailed long after the PPI data are first available. The MLR may still be a convenient data source if a very broad aggregate PPI category is called for, other BLS series are also included in the escalation provision, and quick availability of data is not necessary.

Contracting parties should not cite table numbers and/or table titles in their escalation contracts because they are subject to change. BLS sources are preferable to secondary sources such as other government publications or private firms. If contracting parties agree to accept updated index values on the telephone from BLS staff members, the escalation clause should specify appropriate procedures and whether subsequent verification from a published source is necessary.

In 1995, the BLS began posting PPI series, news releases, and technical information to both a World Wide Web site (<http://www.bls.gov/ppi/>) and a file transfer protocol site (<ftp://ftp.bls.gov/pub/time.series/>). During the years following the introduction of PPI internet services, usage of these sites eclipsed more traditional methods of data dissemination, such as subscriptions to the *PPI Detailed Report*. For example, there were over 1.6 million accesses of PPI series during the 12 months ended December 31, 2003.

*(4) Specify whether seasonally adjusted indexes or unadjusted indexes are to be used.*

In general, seasonally adjusted indexes are not appropriate in escalation agreements. Because price adjustment clauses usually are intended to capture actual price changes, contracting parties normally would not want to remove seasonal price movements from their adjustment calculations.

*(5) State the frequency of price adjustment.*

The escalation clause should specify whether price adjustments are to be made at fixed intervals, such as quarterly, semi-annually, or annually, or only at the expiration of the contract. To conform to the procedure described in guideline (9), price adjustments have to be calculated over an interval whose beginning point is the contract's base period. (This is the time period associated with the chosen base price; for a discussion of base price, see guideline (1).)

Difficulties will be encountered with those contracts which do not designate a specific frequency for price adjustment, but rather state that the latest data available as of a certain date should be used for adjustment. In this case, or for any other case that does not cite a specific time interval, problems will arise unless the designated procedure corresponds with the version of the data to be used, and the date on which the price adjustments will be made. Guideline (7) expands upon these issues.

Note that PPI data are published as monthly indexes and as annual averages for calendar years. Monthly PPIs are representative of the entire month and do not refer to a specific date of the month. Avoid wording such as "the index for aluminum mill shapes as of September 30," since several different and equally plausible interpretations are possible for such language. It could mean the index that was available on September 30, which would be the August figure; it could mean the September index; or it could mean the October index, since the September index would be based on information supplied to BLS before September 30.

*(6) Provide for missing or discontinued data.*

Occasionally any given PPI may be unavailable for a particular time period, usually because price information was not supplied by a sufficient number of survey respondents to meet BLS publication standards. Highly detailed indexes are more susceptible to this problem than indexes for broader groupings. For example, the Producer Price Index for mine roof bolts, code 10-81-02-41 was temporarily discontinued from July 1986 to December 1987; during that period, contracting parties had to use data for the product class coded 10-81-02, or some other series of their choosing. Escalation clauses should provide procedures to be used when required data are missing.

Sometimes an index is permanently discontinued when a commodity declines in market importance; this most commonly occurs as a result of periodic resampling by BLS of industries and their output. Escalation clauses may provide for successor indexes if original indexes are discontinued, or for contracting parties to renegotiate a successor index. A default provision that calls for using the next higher-level series might be included in the contract.

Note that if BLS merely changes the title or recodes an index, it is considered to be the same series and therefore, presumably, should not necessitate any contract renegotiation. The monthly periodical *PPI Detailed Report* routinely provides lists of recoded indexes each time there is a sample change; normally, these lists appear in the January and July issues each year.

*(7) Specify that calculations of price adjustments shall always use the latest version of the PPI data published as of the date specified for such calculations; this requires that contracting parties explicitly agree on the date the price adjustment calculations are to be made.*

Adherence to this principle and its implications should prevent many potential problems. Contracts which fail to incorporate this guideline will instead need to specify which version of PPI data should be used, because: (a) BLS routinely revises PPI data 4 months after initial publication; (b) PPI data are rebased at infrequent intervals; and (c) on rare occasions, PPI data may be corrected.

Among other advantages, following guideline (7) should resolve any ambiguities arising due to the fact that all PPI data are routinely subject to revision once and only once, 4 months after their original publication, to reflect late reports and corrections by respondents in the PPI survey. Revisions are usually small at the higher levels of index aggregation, but often are relatively large for detailed indexes. The version of any PPI published 4 months after its initial publication is considered final and will not change again (barring corrections, and rebasing -- a separate matter addressed in guideline (8)). It is not appropriate to refer to the first-published version of a PPI as "preliminary," and neither the first-published nor the final version of a PPI should be labeled "actual," a term that might mean different things to different contracting parties and which has no official meaning in PPI terminology. [6](#)

To follow guideline (7) effectively, it is essential to specify the date on which the price adjustment is to be made. Currently, PPI data are usually first published between the 9th and the 18th day of the month following the reference month in question. Thus, the earliest day for price adjustment that a contract ought to specify needs to be after the 18th day of the month following the designated data month. All first-published indexes for a given month, as well as final indexes for the fourth previous month, are considered officially published and are available on the day of release of those data, even though most indexes will not appear in print in the *PPI Detailed Report* until several weeks later. The contracting parties' selection of the date on which the price adjustment is to be made should be made only after they have agreed on, first, the reference month and, second, on whether their calculations are to be based upon the first-published version or the final version of that month's index. The date for calculating the price adjustment can then be selected so that the desired data will be available.

It is vital to address these matters *before* a contract is ready for signature. Otherwise, disagreements may arise when the first-published and final versions of the selected index are different, and there will be no criterion for selecting either version.

If contracting parties do not specify an exact date for making price adjustments, the contract should at least specify whether first-published or final data should be used for calculations. If this is the case, the final version of the data should be specified whenever feasible, because only final data will be rebased retroactively whenever BLS may update the PPI reference base.

Any procedure that departs from guideline (7), by failing to specify the version of the data or the date when the price adjustment is to be made, needs to be constructed so that it will be in harmony with the frequency of price adjustment, as specified elsewhere in the contract. This is discussed in guideline (5).

A contract should not refer to an index value associated with a base price, but instead to its month and year alone. That is, what should not be written into the contract is language such as the following: "Divide the current index value by 103.9 (which is the value of the index for the base period January 1990) and then....." Rather, it should be written: "Divide the current index value by the index value for January 1990, which represents the base period, and then....." Contract clauses which incorporate specific index values will become problematic when the PPI reference base is later changed by BLS; the index value incorporated into the contract will be incompatible with current official data after BLS has implemented the rebasing. (Guideline (8) discusses reference base issues.)

*(8) Avoid locking indexes used for escalation into any particular reference base period.*

Contracting parties should simply follow the principle of guideline (7) by calculating percent changes using indexes expressed on the reference base period in effect when the contract escalation is carried out. For example, if a contract called for a price adjustment to be made in December 1987 (just prior to the rebasing that became effective on February 12, 1988), then indexes expressed on the old reference base of 1967 = 100 would be used. In general, relying upon a new index reference base period as set by BLS should not affect calculations (except for rounding differences), as long as all percent changes are derived solely from indexes expressed on the official base period. Because rounding may indeed make a substantial difference when the dollar amount of a contract is very large, it will be doubly important for such contracts to rely only upon official data on the current base as determined by BLS.

Comprehensive base period changes in the PPI system have been routine although infrequent. The switch to the current standard reference base period of 1982 = 100 in early 1988 was the first such rebasing since BLS adopted 1967 as the standard in 1971, and that in turn was the first rebasing since the 1957-59 base was adopted in 1962. In the past, the standard reference base period was updated roughly every 10 years. [7](#)

When the new 1982 = 100 standard reference base was adopted, BLS advised contracting parties and other PPI data users to calculate index percent changes using officially rebased data. As with all other changes to new standard reference base periods, BLS had taken all PPI final data that had been expressed on the 1967 base and officially released these figures retroactively on a 1982 base. Tables of official historical data for each PPI series from its beginning to the present on a consistent 1982 = 100 base were, and are, readily available from BLS on request.

Official PPI data for current time periods are not available on previous reference bases after a base change has been implemented by BLS. Further, as a general rule, estimating a conversion of PPI data to an old base for the purpose of contractual price adjustment is inadvisable because such a method could well be challenged for referencing something other than official government data.

Rebasing factors are only made available by BLS to convert data on the current standard reference base period to the immediately preceding one. Thus, for example, there are no official rebasing factors to convert data on the 1982 = 100 base back to 1957-59 = 100 base.

Rebasing is not considered "revising," because the relative movements of any series over time are not affected. Users must recognize that the absolute level of any index has no intrinsic meaning other than relating a measurement to the base year, which is itself arbitrary to a degree.

Older contracts may already specify use of originally published indexes, particularly since this was recommended by BLS in the September 1979 escalation report (BLS Report 570). *BLS is now strongly discouraging such language in escalation contracts, in accordance with guideline (7) recommending that the latest available version of index data be used.* In addition, BLS does not maintain records for originally-published indexes. As a result, no official rebased versions of such originally published indexes exist.

*(9) Define the mechanics of price adjustment.*

*(a) Simple percentage method.* One method of price adjustment is to have the base price changed by the same percentage as that calculated for the selected PPI. To illustrate, suppose that the contract escalation clause refers to the Finished Goods Price Index. Also suppose that the Finished Goods Price Index was 110.0 when the base price was set. A year later when the first adjustment is made, the figure is 115.5. This represents an increase of 5.0 percent in the Finished Goods Price Index as shown.

Index at time of calculation .....	115.5
Divided by index at time base price was set .....	110.0
<b>Equals .....</b>	<b>1.050</b>

This means that the base price should be increased by 5.0 percent. To proceed:

Base price .....	\$1,000
Multiplied by .....	1.050
<b>Equals adjusted price .....</b>	<b>\$1,050</b>

In later years, this procedure would be applied again by taking the current index value and subtracting from it the index value at the time the base price was set, and then proceeding just as described above.

*(b) Escalation of a portion of the base price.* Another procedure sometimes employed changes the base price so that only part of it is escalated by a selected PPI, while the balance remains fixed. This may be done by changing the base price by a certain dollar amount for each 1-percent movement in the selected index.

To illustrate, suppose that an item has a base price of \$1,000, of which \$700 is to be escalated by the index while the other \$300 remains unchanged. To determine the "certain dollar amount" that is needed for citation in the contract, simply divide the designated variable portion of the base price (\$700) by 100, which in this case would yield \$7. The escalation clause is written so that it provides that the base price of \$ 1,000 shall change \$7 for each 1-percent movement in the index.

Using this approach, the base price would rise to \$1,035.00 for a 5-percent rise in the finished goods price index as shown:

Base price .....	\$1,000.00
Plus 5.0 times \$7 .....	35.00
<b>Equals adjusted price .....</b>	<b>\$1,035.00</b>

*(c) Index points.* Relatively few escalation clauses which rely on PPI data adjust contract prices on the basis of changes in index points. (In the earlier example, the index-point change would be 5.5.) When prices are adjusted by a percentage on the basis of a change in index points, the value of an index point will fall in percentage terms as the index level rises, and vice versa. For example, a 1-point increase in an index from 105.5 to 106.5 represents an advance of 0.9 percent, but a 1-point increase from 205.5 to 206.5 represents an upward movement of only 0.5 percent. Conversely, a 0.9-percent increase in an index of 205.5 would raise the index 1.8 points to 207.3.

Thus, if the base price is adjusted by a dollar amount according to a change of index points, the procedure is then vulnerable to changes in the index base period. Index point values would differ for an index rebased to a later year or expressed on a 1967 = 100 base.

In contrast, adjusting a base price by a percentage change in an index, as in approaches (a) and (b) above, will not result in these discrepancies.

*(d) Composite indexes.* Some contracts describe construction of a composite index based on several PPI series. The advantage of a composite index is that it may more accurately identify the appropriate change for a base price (see guideline (2)) since it will refer to several of the costs involved in producing the product or service in question. However, a composite index entails more calculations at the time of adjustment than the simpler procedures described earlier. Composite indexes constructed by the contracting parties are not official BLS data.

One procedure for specifying a composite index is illustrated by the following steps:

- (i) Choose the indexes that will represent the different costs involved in producing the item (such as a fuels index, a machinery index, or whatever is appropriate);
- (ii) Choose the appropriate weights for these indexes, in accordance with the proportion of the production budget which may be devoted to these various categories. The list of chosen weights should sum to 100 percent.
- (iii) Clearly specify the time period that these relative weights are supposed to represent. The weights should be chosen to represent the time period associated with the base price. (This will be referred to as the base period.)
- (iv) The first step necessary for the calculation of the special index is to rebase all of the original index data to the contract's base period. This is done for each series by dividing the indexes by the index value for the base period, and then multiplying the result by 100. (For this and following steps, note the detailed example at the end of this report.)
- (v) Then derive values for the composite index by multiplying the relative weights by the rebased index values for each index series and summing the results. (This calculation must be done for each month, or other time period, needed for determining the current adjustment.)
- (vi) Using the composite index values created in step (v), calculate the current adjustment in standard fashion, that is, by using the procedure described in (a).

(e) *Limits for price adjustment.* Escalation clauses sometimes contain a *floor*, a *ceiling*, or both, to limit the total price adjustment during the life of the contract. If the upper or lower limit is reached, the parties may renegotiate prices for the duration of the contract. Some contracts specify that no price adjustments are to be made until a minimum change in the selected index has taken place. Contracts may also provide that an escalation is to apply in both an upward and downward direction, or in one direction only .

### **Example of escalation procedures**

Suppose a manufacturer of widgets enters into a long-term sales contract with a customer. The buyer and the seller agree to include an escalation clause which will adjust the selling price once a year to account for changes in labor and materials costs. The following is an example of the terms which might be incorporated into such an escalation clause. The example assumes the use of the special index method, discussed in section (d) of guideline (9).

(A) The base selling price for a lot of 10,000 type A widgets is set at \$768,450.00 as of December 1989, to remain in effect for 1 year. December 1989 is hereafter called the reference base period.

(B) The base selling price shall be adjusted in accordance with the percent changes of the special index which is described in (D) below. The special index shall be derived from the following index series:

(i) *The Employment Cost Index for total compensation, durable goods manufacturing*, not seasonally adjusted, as it appears in the periodical *Monthly Labor Review* as published by the U.S. Department of Labor, Bureau of Labor Statistics; this series shall be referred to as the labor index.

(ii) *The Producer Price Index for special industry machinery and equipment*, commodity code 116, not seasonally adjusted, as it appears in the *PPI Detailed Report* as published by the U.S. Department of Labor, Bureau of Labor Statistics; this index shall be referred to as the materials index; and

(iii) *The Producer Price Index for number 2 diesel fuel*, commodity code 057303, not seasonally adjusted, as it appears in the periodical, *PPI Detailed Report* as published by the U.S. Department of Labor, Bureau of Labor Statistics; this index shall be referred to as the fuels index.

(C) The selling price shall be adjusted on February 20 of each subsequent year, based upon the percent changes (whether up or down) in the special index specified below, between the reference base period December 1989 and December of the most recent year. All calculations for the special index shall be based upon the latest versions of the Producer Price Index and Employment Cost Index data published as of February 20 each year.

(D) The special index shall be derived in the following manner:

(i) The values for the current period for each of the three BLS index series specified in (B) above shall be rebased to the reference base period December 1989; this shall be done by dividing the current value of each index by its value for the reference base period, and then multiplying the result by 100.

(ii) The rebased labor index shall be assigned a relative weight of forty (40) percent; the rebased materials index shall be assigned a relative weight of forty (40) percent; the rebased fuels index shall be assigned a relative weight of twenty (20) percent; these relative weights represent the base period of December 1989.

(iii) Multiply the rebased current value for each of the three indexes by its relative weight.

(iv) The sum of these three figures shall be the value of the special index for the current time period;

(v) Multiply the current value of the special index by the original base price, and then divide by 100; this final figure shall be the adjusted price for the current time period.

(E) If December ECI data are not available for any year, the ECI for the immediately preceding September shall be used as the basis for adjustment of the labor index. If December PPI data are not available for any year, the PPI data for the immediately preceding November, October, or September, whichever is the most recent month which has published data, shall be used as the basis for adjustment of the materials and fuels indexes. If no ECI or PPI data have been published for those months, then the contracting parties shall agree upon substitute series by February 20.

With these terms in effect, table 1 shows some hypothetical data and calculations which might have been made on February 20, 1991 to determine the new selling price for a set of 10,000 type A widgets as of December 1, 1990.

**Table 1. Example of calculation procedures**

	Labor	Materials	Fuels	Composite
Base price = \$768,450	-	-	-	-
Current period series values (December 1990)	107.2	133.4	91.0	-
Divide by the base period series values (December 1989)	102.2	128.6	68.5	-
equals:	1.049	1.037	1.328	-
Multiply by 100 to yield the converted series values	104.9	103.7	132.8	-
Multiply by assigned weight (Labor 40%, Materials 40%, Fuels 20%)	41.96	41.48	26.56	-
Add the three figures to get the current value (December 1990) for the special index	-	-	-	110.0
Multiply by original base price (\$768,450)	-	-	-	84,529,500
Divide by 100 to yield the adjusted price	-	-	-	\$845,295

### **Pitfalls to avoid**

Vague citation of "the Producer Price Index" rather than a reference to a specific index by its title and any identifying code number. *See guideline (3).*

Citation of the all commodities index or the industrial commodities index rather than an index that does not include multiple counting of price changes. *See the discussion of commodity indexes in the appendix.*

Use of unofficial estimates derived from rebasing factors rather than relying upon official BLS data. *See guideline (8).*

Ambiguous reference to dates ("index as of May 30"). *See guideline (5).*

Lack of a provision for a successor index should the designated index be dropped from the PPI program, or if it should become temporarily unavailable. *See guideline (6).*

Locking index into a specific base period. *See guideline (8).*

Using ambiguous terms. For example, referring to "actual" indexes. *See guideline (7).*

## **Appendix: Three Index Structures: A Brief Overview**

### **Stage of Processing (SOP) indexes**

The Finished Goods Price Index measures price changes for goods that will not undergo further processing and are ready for sale to the final demand user, either an individual or a business firm. Consumer foods include unprocessed foods such as bakery products and meats. Other finished consumer goods include durable goods such as automobiles, household furniture, and appliances, and nondurable goods such as apparel and home heating oil. Capital equipment includes producer durable goods such as heavy motor trucks, tractors, and machine tools.

The stage-of-processing category for intermediate materials, supplies, and components consists in part of commodities that have been partly processed but require further processing. Examples of such semifinished goods include flour, cotton yarn, steel mill products, and lumber. The intermediate goods category also encompasses nondurable, physically complete items purchased by business firms for their operations. Examples include diesel fuel, belts and belting, paper boxes, and fertilizers. Several sub-category indexes are available, such as an index for intermediate goods less foods and energy.

Crude materials for further processing are products entering the market for the first time that have not been manufactured or fabricated and that are not sold directly to consumers. Crude foodstuffs and feedstuffs include items such as grains and livestock. Examples of crude nonfood materials include raw cotton, crude petroleum, coal hides and skins and metal scrap.

### **Industry indexes**

The entire output of various industries is sampled to derive price indexes for the net output of industries and their products. Such indexes are grouped according to the NAICS and Census product code extension of the NAICS. Industry price indexes are compatible with other economic time series organized by NAICS codes, such as data on employment, wages, and productivity. This is especially convenient if indexes reflecting cost inputs other than PPIs also are used in the escalation procedure.

### **Commodity indexes**

The commodity classification structure includes 15 major groups. This scheme of organization evolved over many years; its greatest usefulness is the availability of a large amount of historical data. The coding system used for these indexes is unique to the PPI program; no other governmental statistical program uses it. Commodities are grouped according to similarity of material composition and end use, regardless of the industry of origin.

Unlike SOP indexes, some of the traditional commodity grouping indexes such as the all commodities index and the industrial commodities index exhibit a multiple counting problem in reflecting price changes. This occurs because many products go through successive stages of fabrication or processing and have their price changes counted separately at each stage. SOP indexes largely offset the defect of multiple counting of price changes.

Multiple counting of price change can arise as follows: Suppose that a price for steel scrap results in an increase in the price of steel sheet and then an increase in the price of automobiles. The all commodities index would increase as a result of all three changes, whereas the typical end-use purchaser would only note the price increase for automobiles. The grouping of products by stage of processing eliminates double counting of commodity price changes as they pass through different stages. The SOP structure would reflect the increase in the price of steel scrap only in the Crude Materials Price Index, the rise in steel sheet only in the Intermediate Materials Price Index, and the rise in automobile prices only in the Finished Goods Price Index.

## Footnotes

**1** See, *The BLS Industrial Price Program: A Survey of Users*, Report 509 (Bureau of Labor Statistics, 1977).

**2** Data requests and technical questions concerning the PPI may be addressed to: Section of Index Analysis and Public Information, Division of Industrial Prices and Price Indexes, Office of Prices and Living Conditions, Bureau of Labor Statistics, Room 3840, 2 Massachusetts Avenue NE, Washington, DC 20212. PPI staff can also be reached at telephone number 202-691-7705, or by e-mail at ([ppi-info@bls.gov](mailto:ppi-info@bls.gov)). Please refer to the desired series by title and code number, exactly as cited in the contract.

**3** The Employment Cost Index (ECI) is based upon a quarterly survey and is available only for the months of March, June, September, and December each year. Because the ECI has relatively little industry detail at present, data users may have to use a higher level of aggregation than they do with PPI data. However, the Employment Cost Index is a highly useful measure of labor costs because it covers all workers (not just production and nonsupervisory workers) and because it includes not only wages and salaries but also employer costs for employee benefits. Like the PPI, the ECI is a fixed-weight index and this is not influenced by employment shifts among industries and occupations with different wage and benefit levels. But unlike the PPI, ECI data are final when they are first published and are not subject to revision (except on a seasonally adjusted basis).

**4** From the seller's point of view, a contract which escalates the price of a product based on the change in the PPI for that same product might not provide an appropriate basis for changing the base price. In those cases where most companies reporting a product's price to BLS are tied to escalation clauses using the PPI for that same product, these firms would be unable to raise their price until the PPI advances; there could be no advance in the PPI until the companies are able to raise their price. From the buyer's point of view, a reverse circularity is evident when the price of a product purchased is escalated by the PPI for the same product. A rise in the contract price may be reflected in a rise in the PPI, which would trigger yet another rise, etc.

**5** Sometimes, however, government agencies, laws, or regulations may dictate which index or level of detail must be cited. If detailed indexes must be used, note that some product indexes published in the industry structure scheme correspond to 8-digit commodity indexes in the commodity structure system. In these cases, movement of the latter indexes are calculated on the basis of movements of their counterparts in the industry structure scheme.

**6** As an example of PPI practices, first-published PPI data for December 1990, as well as final data for August, were released on January 11, 1991. Final data for December were released on May 10, 1991 with the first release of April data. Final data for all indexes now appear in each issue of the *PPI Detailed Report*; the "Summary Data from the Produce Price Index News Release" includes final data only for stage-of-processing groupings and certain commodity groupings. Contracting parties who want to use other BLS series for escalation in addition to PPIs should be aware that each BLS program has its own revision and correction policies.

**7** For SOP and most commodity indexes, the base year currently is 1982; indexes introduced into the system since then are based on the month they were first calculated, usually either December or June. Industry and product indexes currently have no standard base but are based on the month of their first publication.